

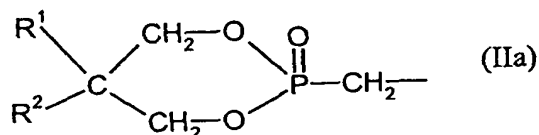
Patent claims

1. Blends containing polycarbonate and/or polyester carbonate and from 0.1 to 30 parts by weight of phosphonate amine of formula (I)

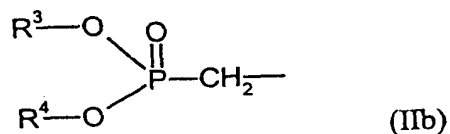


in which

A represents a radical of formula (IIa)



or (IIb)



R^1 and R^2 are each independently of the other unsubstituted or substituted C_1 - C_{10} -alkyl or unsubstituted or substituted C_6 - C_{10} -aryl,

R^3 and R^4 are each independently of the other unsubstituted or substituted C_1 - C_{10} -alkyl or unsubstituted or substituted C_6 - C_{10} -aryl, or

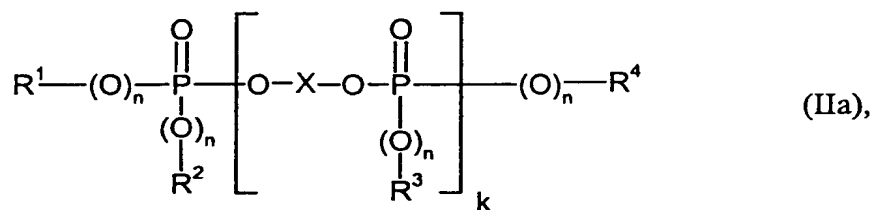
R^3 and R^4 together represent unsubstituted or substituted C_3 - C_{10} -alkylene,

y represents the numerical values 0, 1 or 2, and

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the substituents B are each independently hydrogen, optionally halogenated C₂-C₈-alkyl, unsubstituted or substituted C₆-C₁₀-aryl, and

from 0.1 to 20 parts by weight of at least one phosphorus compound of the general formulae (IIa), (IIb), (IIc) and (IId)



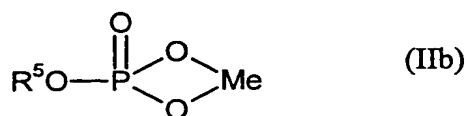
wherein

R¹, R², R³ and R⁴ are each independently of the others optionally halogenated C₁- to C₈-alkyl, or C₅- to C₆-cycloalkyl, C₆- to C₂₀-aryl or C₇- to C₁₂-aralkyl each optionally substituted by alkyl and/or by halogen,

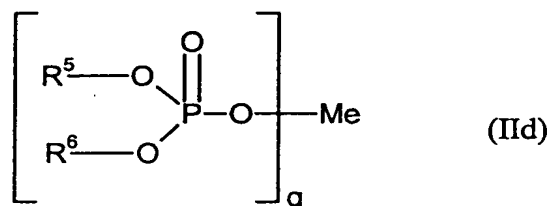
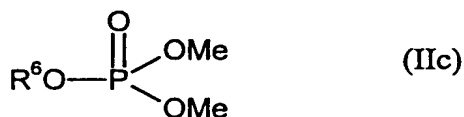
the substituents n are each independently of the others 0 or 1,

k represents from 0 to 30, and

X represents a mono- or poly-nuclear aromatic radical having from 6 to 30 carbon atoms,



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wherein

5 R^5 and R^6 are each independently of the other optionally halogenated $\text{C}_1\text{-C}_{24}$ -alkyl, or $\text{C}_5\text{-C}_6$ -cycloalkyl, $\text{C}_6\text{-C}_{20}$ -aryl or $\text{C}_7\text{-C}_{12}$ -aralkyl each optionally substituted by halogen and/or by $\text{C}_1\text{-C}_{10}$ -alkyl,

or

10

R^5 and R^6 in the case of formula (IIId) form an alkyl chain,

Me represents a metal selected from main groups 1 to 3 and subsidiary groups VIII, 1B and 2B of the periodic system,

15

and q is determined by the valency of the metal ion,

and, optionally, impact strength modifiers, the indicated amounts being based on the total mixture.

20

2. Blends according to claim 1 containing from 0.1 to 30 parts by weight, based on the total mixture, of phosphonate amine and from 0.5 to 20 parts by weight of at least one phosphorus compound of formulae (IIa), (IIb), (IIc) and (IIId).

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3. ~~Blends according to claims 1 and 2 containing graft polymers as the impact strength modifiers.~~

5 4. Blends according to any of claims 1 to 3 containing

A) from 40 to 99 parts by weight of aromatic polycarbonate and/or polyester carbonate,

10 B) from 0.5 to 60 parts by weight of graft polymer of

B.1) from 5 to 95 wt.% of one or more vinyl monomers with

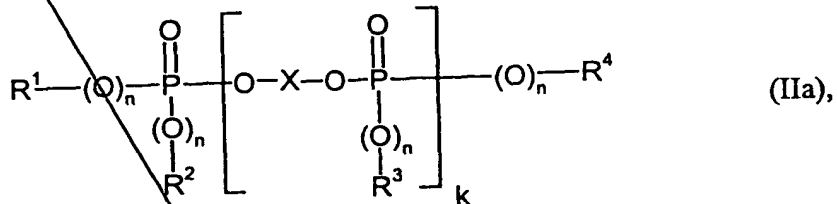
15 B.2) from 95 to 5 wt.% of one or more graft bases having a glass transition temperature $< 10^{\circ}\text{C}$,

20 C) from 0 to 45 parts by weight of at least one thermoplastic polymer selected from the group of the vinyl (co)polymers and polyalkylene terephthalates,

D) from 0.1 to 30 parts by weight of at least one component selected from the group of the phosphonate amines of formula (I) according to claim 1,

25 E) from 0.5 to 20 parts by weight of phosphorus compound selected from at least one phosphorus compound of the general formulae (IIa), (IIb), (IIc) and (IId),

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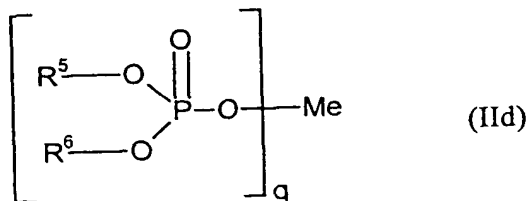
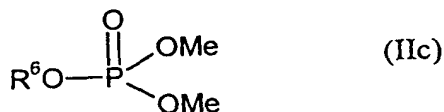
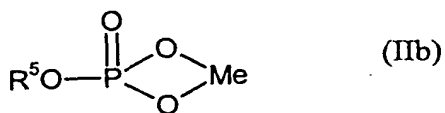
wherein

R^1, R^2, R^3 and R^4 are each independently of the others optionally halogenated C_1 - to C_8 -alkyl, or C_5 - to C_6 -cycloalkyl, C_6 - to C_{20} -aryl or C_7 - to C_{12} -aralkyl each optionally substituted by alkyl and/or by halogen,

the substituents n are each independently of the others 0 or 1,

k represents from 0 to 30, and

X represents a mono- or poly-nuclear aromatic radical having from 6 to 30 carbon atoms,



wherein

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R^5 and R^6 are each independently of the other optionally halogenated C_1 - C_{24} -alkyl, or C_5 - C_6 -cycloalkyl, C_6 - C_{20} -aryl or C_7 - C_{12} -aralkyl each optionally substituted by halogen and/or by C_1 - C_{10} -alkyl,

or

R^5 and R^6 in the case of formula (II d) form an alkyl chain,

Me represents a metal selected from main groups 1 to 3 and subsidiary groups VIII, 1B and 2B of the periodic system,

and q is determined by the valency of the metal ion,

F) from 0 to 5 parts by weight of fluorinated polyolefin,

the sum of the parts by weight of all the components of the blend being 100.

5. Blends according to any of claims 1 to 4 containing

from 60 to 98.5 parts by weight of A

from 1 to 40 parts by weight of B

from 0 to 30 parts by weight of C

from 1 to 25 parts by weight of D

from 1 to 18 parts by weight of E and

from 0.1 to 1 part by weight of F.

6. Blends according to any of claims 1 to 5 containing

from 2 to 25 parts by weight of B

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from 2 to 20 parts by weight of D
from 2 to 15 parts by weight of E and
from 0.1 to 0.5 part by weight of F.

5 7. Blends according to any of the preceding claims containing from 2 to 25
parts by weight of C.

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8. Blends according to one or more of the preceding claims containing
phosphonate amines selected from the group 5,5,5',5',5'',5'''-hexamethyl-
10 tris(1,3,2-dioxaphosphorinane-methane)amin-2,2',2''-trioxide, 1,3,2-
dioxaphosphorinane-2-methaneamine, N-butyl-N[(5,5-dimethyl-1,3,2-dioxa-
phosphorinan-2-yl)methyl]-5,5-dimethyl-, P,2-dioxides; 1,3,2-
dioxaphosphorinane-2-methaneamine, N-[(5,5-dimethyl-1,3,2-
15 dioxaphosphorinan-2-yl)methyl]-5,5-dimethyl-N-phenyl-, P,2-dioxide; 1,3,2-
dioxaphosphorinane-2-methaneamine, N,N-dibutyl-5,5-dimethyl-, 2-oxide,
1,3,2-dioxaphosphorinane-2-methaneimine, N-[(5,5-dimethyl-1,3,2-
dioxaphosphorinan-2-yl)methyl]-N-ethyl-5,5-dimethyl-, P,2-dioxide, 1,3,2-
20 dioxaphosphorinane-2-methaneamine, N-butyl-N-[(5,5-dichloromethyl-1,3,2-
dioxaphosphorinan-2-yl)methyl]-5,5-di-chloromethyl-, P,2-dioxide, 1,3,2-
dioxaphosphorinane-2-methaneamine, N-[(5,5-di-chloromethyl-1,3,2-
dioxaphosphorinan-2-yl)methyl]-5,5-dichloromethyl-N-phenyl-, P,2-dioxide;
1,3,2-dioxaphosphorinane-2-methaneamine, N,N-di-(4-chlorobutyl)-5,5-
25 dimethyl-2-oxides; 1,3,2-dioxaphosphorinane-2-methaneimine, N-[(5,5-
dimethyl-1,3,2-dioxaphosphorinan-2-yl)methane]-N-(2-chloroethyl)-5,5-
di(chloromethyl)-, P,2-dioxide.

9. Blends according to any of the preceding claims, wherein vinyl monomers
B.1 are mixtures of

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- 5 B.1.1 from 50 to 99 parts by weight of vinyl aromatic compounds and/or vinyl aromatic compounds substituted at the ring and/or methacrylic acid (C₁-C₄)-alkyl esters and
- B.1.2 from 1 to 50 parts by weight of vinyl cyanides and/or (meth)acrylic acid (C₁-C₈)-alkyl esters and/or derivatives of unsaturated carboxylic acids.
- 10 10. Blends according to any of the preceding claims, wherein the graft base B.2 is selected from at least one rubber from the group consisting of diene rubbers, EP(D)M rubbers, acrylate, polyurethane, silicone, chloroprene and ethylene/vinyl acetate rubbers.
- 15 11. Blends according to any of the preceding claims containing at least one additive selected from the group of the lubricating and mould-release agents, nucleating agents, antistatics, stabilisers, colourings and pigments.
- 20 12. Process for producing moulding compositions according to claim 1, wherein components A to F and, optionally, other additives are mixed and melt-compounded.
13. Use of the moulding compositions according to any of claims 1 to 12 in the production of moulded bodies.
- 25 14. Moulded bodies obtainable from moulding compositions according to any of claims 1 to 12.
15. Casing parts according to claim 14.

Add A4